Should Motorola Workers Be Wary of Google? The Value of Loyal Skeptics Rover Gets Interplanetary Tech Support

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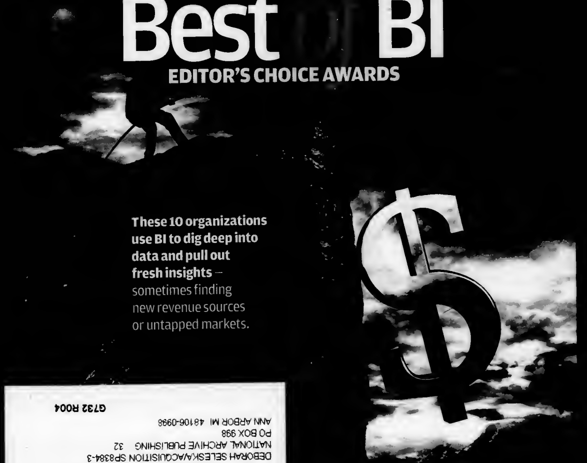

These 10 organizations use BI to dig deep into data and pull out fresh insights – sometimes finding new revenue sources or untapped markets.

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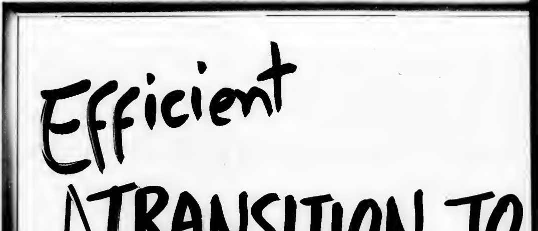

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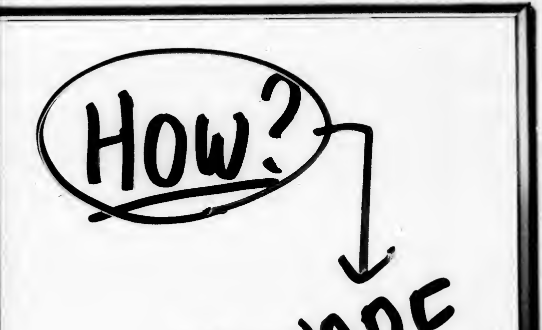

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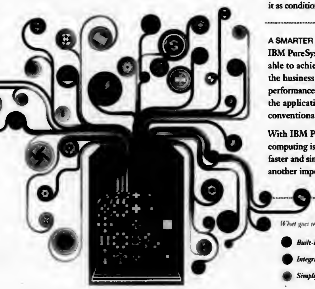

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- ● ***Integration by design***
- ● ***Simplified experience***

LET'S BUILD A SMARTER PLANET.

IBM.

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1 Based on a 2011 commissioned study conducted by Forrester Consulting on behalf of IBM. 2 Based upon testing of the IBM PureApplication System W1500-96 with time measured from powering on the system to when it is ready to support application deployments and based upon testing of the IBM PureFlex System Express & Standard models containing one chassis and one compute node with the time measured from powering on the system to when it is ready to support a virtual image deployment. 3 Up to 2X application density based upon simulations of virtualized applications on an IBM Flex System x240 Compute Node as compared to a previous generation IBM system. The IBM Flex System x240 Compute Node is available in IBM PureFlex System and IBM PureApplication System. Up to 2X performance of business applications based upon testing of IBM Storwize v7000 "Easy Tier" on previous generation IBM system. IBM Storwize v7000 is included in IBM PureFlex System and IBM PureApplication System. IBM, the IBM logo, ibm.com, PureSystems, Smarter Planet and the planet icon are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. © International Business Machines Corporation 2012.

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Best of BI

EDITOR'S CHOICE AWARDS

The 10 organizations spotlighted in our first-ever Best of BI Editor's Choice Awards have learned how to get the valuable insights they need from their data using business intelligence and analytics tools. Chosen by a panel of *Computerworld* editors, these organizations are making better business decisions and, in some cases, generating new revenue streams and tapping into new markets. Find out how they're taking BI to the next level.

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HeadsUp

ILLUSTRATION: NASA/JPL-CALTECH

EMERGING TECH

Rover Gets Interplanetary Tech Support

PICTURE DOING a software upgrade. Now picture doing it when the machine you're upgrading is sitting 156 million miles away. And now picture tweaking that software every day.

That's what programmers and engineers at NASA's Jet Propulsion Laboratory have to do to ensure that the Mars rover Curiosity is able to carry out its mission.

After Curiosity landed safely on the Red Planet earlier this month, JPL technicians successfully undertook a four-day project to download updated flight software onto the rover. The upgrade changed Curiosity's software from a program optimized for landing on Mars to one optimized for working on the planet's surface, said Michael Watkins, a mission systems manager at JPL.

The team needed "to take a whole series of steps to make that software active," said Steve Scandore, a senior flight software engineer. "It's not like doing a regular remote upgrade. We have no one we can ask to check something for us. We have to send code up and then wait."

And that upgrade was just the start of ongoing efforts to tweak the rover's software. Around 100 JPL programmers write commands for Curiosity every day, said Andy Mishkin, a mission leader.

Curiosity needs to be told what to do — move across the bottom of a crater, zap a rock with its laser, scoop up a soil sample — and programmers have to write the code that tells it to do those things. They have about a half-day to write, test and upload each day's batch of commands.

– Sharon Gaudin

OUTSOURCING

IT Services Deals Decline 20% in Second Quarter

The number of new outsourcing contracts worldwide dropped by 20% in the second quarter, to 411 from 516 in the same period a year earlier, with contract values also sliding, according to new research.

"The market is growing, but the pace of growth is slowing," said Salil Dani, an analyst at Everest Group.

The decline in the number of new contracts can be partly attributed to economic factors such as the debt crisis in Europe, Dani said. But organizations in the U.S. are also shying away because the presidential campaign has featured some anti-offshoring rhetoric, he added.

Everest said its estimate is based on publicly disclosed data and includes new transactions as well as renewals. The annualized value of newly reported contracts in the second quarter was $2.3 billion, compared with $2.6 billion in the same quarter last year, the research firm said. (The annualized value is the total value of a deal divided by the number of years it lasts.)

There were 54 deals with total values exceeding $50 million each reported in the second quarter, compared with 61 in the first quarter. That second-quarter figure includes two deals with total values of more than $1 billion each, Everest said. But there are a lot of contracts worth less than $25 million.

– JOHN RIBEIRO, IDG NEWS SERVICE

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ILLUSTRATION: NASA/JPL-CALTECH

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CONSUMERIZATION OF IT

Wearable Tech Market on the Upswing

DEMAND FOR REAL-TIME DATA, including personal health information, will drive the market for wearable wireless devices to grow from 14 million items this year to as many as 171 million in 2016.

In four years, the market for these devices is expected to hit a minimum of $6 billion, according to IMS Research, a subsidiary of IHS.

That is "our most conservative forecast," said IMS analyst Theo Ahadome. The estimate assumes that the adoption of wearable technology will be limited by factors such as a lack of suitable technology, "poor user compliance" and an experience that isn't as "enhanced" as users might expect it to be, he said.

Most of today's wearable devices are designed for healthcare-related uses, such as glucose and heart rate monitoring. In the future, the market will see a dramatic rise in the number of devices for personal entertainment and military use, IMS predicted.

Google Glasses and the rumored Apple Smart Watch will be part of the next wave. Other wearable devices that are likely to emerge include sleep sensors, hand-worn terminals and so-called heads-up displays — transparent screens attached to helmets that provide data for industrial and military use.

The Federal Communications Commission recently approved a Medical Body Area Network (MBAN) radio spectrum for use in hospitals. Over time, experts say, MBAN devices could be used at home.

MBAN systems could monitor numerous functions, aggregate the results and then transmit the data to a remote location — such as a public or private cloud — for evaluation.

One looming concern, however, is the security of any health data collected and transmitted by such equipment. According to research firm IDC, more than three quarters of all digital information is generated by individuals and less than one-third of all data stored has even minimal protection.

– Lucas Mearian

Micro Burst

Google will pay as much as

2 million

to researchers who find flaws in the Chrome browser at a hacking contest in Kuala Lampur this fall.

LEGAL ISSUES

Google Hit With Fine, Bad PR for Tracking Users

Google will pay a historic fine to settle Federal Trade Commission charges that it bypassed privacy settings and used cookies to track Apple Safari users who visited Google's DoubleClick ad network.

The $22.5 million civil penalty is the largest ever secured by the FTC for a violation of this type. The settlement also mandates that Google disable all the cookies it placed on affected users' computers.

But some observers are calling for even stiffer penalties. The fine is "chump change" for Google, and the FTC shouldn't have agreed to a settlement unless Google was willing to admit guilt, said John Simpson, director of the privacy project at ConsumerWatchdog.org.

Pointing out that Google reported more than $12 billion in pretax earnings in 2011, Dan Olds, an analyst at Gabriel Consulting Group, said the FTC fine "is more like a rounding error than a serious punishment."

Olds said he doubts Google will change its ways significantly, but he speculated that the bad press "might keep Google from so obviously flouting an FTC order again" — though it could just defy regulators in ways that are harder to detect.

– JUAN CARLOS PEREZ OF THE IDG NEWS SERVICE AND SHARON GAUDIN

Facebook's custom-built data center in Prineville, Ore.

Data Center Hub Arises in Central Oregon City

Facebook and Apple plan to build facilities covering a combined 1.2 million square feet in Prineville, a community of less than 10,000 residents. By Patrick Thibodeau

APPLE AND FACEBOOK this month each filed plans to expand data center operations in Prineville, Ore., a small community that's on its way to becoming one of the top data center locations in the U.S.

Once the latest projects are completed, the two tech firms will be running a combined 1.2 million square feet of data center space, and each company owns enough land in the city to expand well beyond that.

Facebook was in Prineville first, building what became a 334,000-square-foot data center in 2010. It's now finishing work on a companion facility estimated by local officials to be 360,000 square feet.

The social networking company's latest plan calls for construction of a third facility that will be 60,000 square feet.

Facebook owns about 120 acres of land in Prineville, which is the seat of Crook County.

Meanwhile, Apple submitted a master plan to "slowly build over time" up to 500,000 square feet of data center space, said Joshua Smith, Prineville's senior planner. The company is now nearing completion of a 10,000-square-foot data center on a 160-acre parcel.

Considering the amount of land the companies own, and the ever-growing demand for data center space, "it would not be surprising if [one day] there was more than 2 million square feet in data center space between [them]," said Jason Carr, manager of the Prineville office of the nonprofit Economic Development for Central Oregon (EDCO).

Some people might wonder how Prineville, with a population of just over 9,000, attracted the attention of companies like Apple and Facebook.

Local economic development officials say a number of factors work in the city's favor. For instance, there's plenty of reliable electricity because major trunk lines pass through the region, and the power costs are relatively low — roughly 5.5 cents per kilowatt-hour.

Also, there's plenty of available land, and the climate — arid and cool at night — is ideal for systems running in large data centers.

Both Apple and Facebook also received 15-year tax exemptions that apply to buildings and equipment, though not to land, officials noted.

The state has no sales taxes on equipment, a policy that "was designed to favor large capital investments," said Roger Lee, executive director of EDCO.

Offsetting Facebook's tax exemption is a power franchise fee, which is based on the company's power bill. About 5% of Facebook's monthly power bill — now about $60,000 — goes to the city of Prineville, Carr said.

The city also imposed a so-called "community fee" to help cover the cost of public services used by the facilities. Facebook is projected to pay about $110,000 per year in such fees, and Apple's annual assessment is expected to be $140,000, according to Carr.

Prineville officials shouldn't expect the Apple and Facebook facilities to significantly boost the number of local jobs, though, because data centers aren't big employers.

Facebook currently employs about 60 people at its data center; that figure might reach 100 once the company's expansion is complete. Apple will likely employ roughly the same number of people, local officials said.

Facebook and Apple have also built data centers in rural parts of western North Carolina — an area that's also home to a Google facility. ◆

It would not be surprising if [one day] there was more than **2 million square feet** in data center space between [them].

WIKIMEDIA

Motorola Workers Wary of Google

A plan to cut 4,000 Motorola Mobility jobs and close several facilities fuels speculation that Google wanted Motorola's 17,000 patents, not its engineers or its products. By Matt Hamblen

GOOGLE'S PLAN to cut 20% of the workforce at its Motorola Mobility unit has reignited internal fears that the Internet giant primarily had its eye on 17,000 Motorola patents when it acquired the mobile device maker in May.

Google earlier this month announced plans to close or consolidate about one-third of Motorola Mobility's 90 facilities, cut 4,000 jobs and simplify its product portfolio by shifting from feature phones to more "innovative and profitable" devices.

The 4,000 job cuts are "an earthquake up and down the hallways of Motorola Mobility," said Jeff Kagan, an independent analyst. "Google has never laid off workers like this before, so [there's] an unsettling feeling in the hallways of Google. Everyone at Motorola is asking [whether Google wants only the patents] and is fearing the answer."

A rich store of patents has become a kind of insurance policy for companies in the mobile device market, where patent disputes are increasingly common. As evidence of this state of affairs, analysts cite recent patent acquisitions by Google, Apple and Facebook and point to the closely watched legal battle between Samsung and Apple — the two companies that dominate the mobile device market.

It remains unclear whether Google bought Motorola primarily to use its broad portfolio of patents, some of which date back to the creation of radio communications, as ammunition in patent disputes with the likes of Apple and other mobile device makers, analysts say.

In fact, just days after announcing the layoffs, Google filed the latest of multiple claims against Apple with the U.S. International Trade Commission, this time asserting that various popular devices, including the iPhone, the iPad and the iPod Touch, infringe on Motorola Mobility patents related to email notifications, location reminders and media players.

Google, meanwhile, hasn't offered details of its plans for Motorola Mobility, though a source close to the company, who asked not to be identified, described the $12.5 billion acquisition as a long-term bet and a commitment to the unit's smartphones and tablets,

> Google has **never laid off workers like this before,** so [there's] an unsettling feeling in the hallways of Google."

In documents filed with the U.S. Securities and Exchange Commission, Google said that the job cuts and other moves are "designed to return Motorola's mobile devices to profitability after it lost money in 14 of the last 16 quarters."

Jack Gold, an analyst at J.Gold Associates, said that while Google has long coveted the Motorola patents, it probably is also looking to utilize the engineering expertise and mobile device knowledge of the unit's workforce.

"I don't think this is the end of Motorola, but I do expect a scaled-back presence with fewer phone models and a heavy concentration on the higher end of the market," Gold said. "Just like Nokia and RIM, Motorola is being forced to concentrate on its core growth areas and not [on] the low end, where it can't win."

Carolina Milanesi, an analyst at Gartner, said the layoffs might not be a sign that Google plans to keep patents and drop workers, but the action does suggest a narrowing of focus at Motorola Mobility. She said Google could succeed in the smartphone and tablet business by bundling its own software and services with Motorola Mobility devices. "Making money out of the hardware is a game that only very few can succeed at nowadays," Milanesi noted. ◆

***John Ribeiro** and **Marc Ferranti** of the IDG News Service contributed to this story.*

THINKSTOCK

THE Grill

Ramón Baez

Priority No. 1 for this rising CIO is changing executive mindsets about IT.

What's your favorite technology? My iPad. I absolutely love it.

Android, iPhone or BlackBerry? The iPhone, because it's simple. And with the iPad, it all works together.

What's your life's ambition? I'd like to be on a board of directors or two and write a book or two.

What are your favorite pastimes? Golf, exercise and visiting my grandchildren.

Is there something that most people don't know about you? I used to be a hair stylist. It was the family business. When I got started at Northrop Grumman, I was a tool-storage trainee, but I also cut hair.

What's your favorite vice? Wine

BEFORE HE WAS NAMED *senior vice president and global CIO at Hewlett-Packard earlier this month, Ramón Baez spent five years as CIO at Kimberly-Clark. Reflecting on his tenure at the $20 billion personal paper products company in an interview with* Computerworld, *Baez recounts some of his early challenges — including outsourcing negotiations that were going off the rails and a series of unexpected SAP service outages. As he moves on to HP, Kimberly-Clark's outsourcing relationship is on firm footing, its SAP system is running without a hitch and — most important — its IT organization is regarded as a strategic value center.*

Just as you started as CIO in 2007, Kimberly-Clark's IT organization faced a big problem. What was happening? We were going through [outsourcing negotiations] that created all sorts of challenges. When you go through that, you have a lot of morale issues and you have to make sure you transition well and stabilize the environment.

What went wrong? The terms of the outsourcing contract for our global IT infrastructure had been misinterpreted by the provider. I knew that if I didn't get engaged right away, Kimberly-Clark was going to face the same fate that occurred at other companies where I had worked. Instead of the model being more efficient and effective, it was actually going to be more expensive and very bureaucratic and difficult.

What did you do about it? The first time the CEO of the outsourcing company and I sat down, I said, "We have to make a change." He said, "I get that. But before we do that, I want to know, do we really have a relationship, you and I?" His attitude was: If we don't have a relationship, let's just kill [the contract] now. He viewed our relationship as being for a lifetime, and that changed the attitude on both sides. We produced a new statement of work that brought the higher-level engineering work back in-house and kept the stuff that was more task-oriented outsourced. It's not so much about the contract but the relationship you have with the leader of the other company. If you don't have a good relationship, then you shouldn't be working with them.

What has been your biggest disappointment? It took much too long to get to transformation in our outsourcing arrangement. And just when we thought we were at the point where we would be transforming, things started breaking. In an outsourced environment, if something is not standard and not easy to follow, when things start acting up, you don't know why. The former team knew what those issues were. The outsource partner didn't.

You had some system outages as well, correct? We had some outages that were frustrating for me as the IT leader, and the CEO and our executive council were very disappointed in us. Outages are going to happen. What's important is that you turn them around very quickly. We didn't.

What was the problem? It was the way we concatenated a bunch of instances of SAP processes. Every time there was a new need or demand coming in, we just stuck another instance on it. Before we knew it, we had a mess. We had multiple providers making mistakes, we had people in our own shop making mistakes, and it caused a ripple effect. The architecture we had in place was too complex, and we didn't know that until things started breaking. Our team and SAP went through the pain points and simplified the environment. In 2010, we had a number of outages. This year, 2012, we have had zero.

The recession was hard on consumer products companies. How did you and your colleagues in IT respond to that challenge at Kimberly-Clark? If we were going to get to the other side of the economic downturn, IT needed to get better at how we deploy capabilities that support the goals and objectives of the businesses.

How did you make that happen? We created these things called business capability road maps. For example, every part of [Kimberly-Clark's] consumer business does trade-promotion management, but each region and country wants to do it a different way. We laid out these road maps, and IT leaders literally [were able to change] the conversation we were having with the business leaders in understanding what we should be deploying in order for them to hit their goals and objectives. We got everyone to agree to one solution and saved tens of millions of dollars.

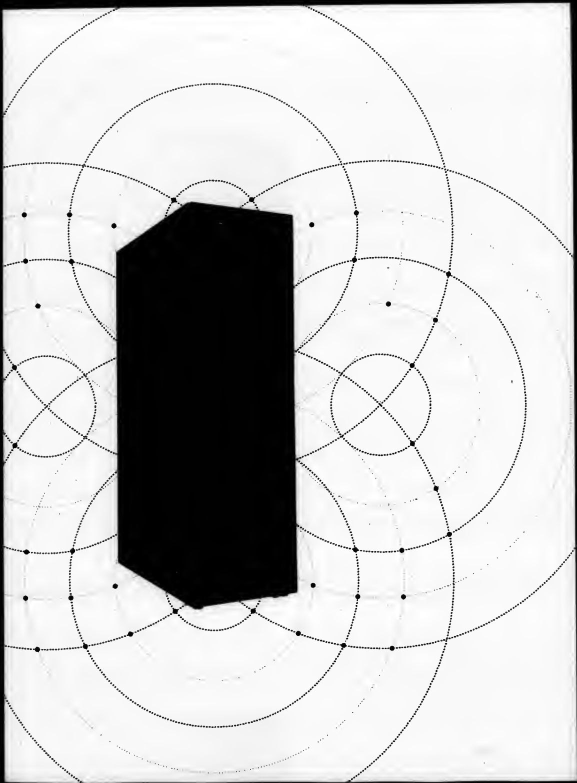
Everyone talks about making IT a strategic value center, but you actually did that. How? When I came on board, business leaders weren't viewing IT as strategic. The company had decided it might as well just outsource a lot of IT. My boss, the CFO, viewed IT as a game-changer, so it was important to get people to understand how strategic IT can be. It's taken a while to get there, but when people saw what we built — the whole capability road-mapping — they understood.

> **When I came on board, business leaders weren't viewing IT as strategic.** The company had decided it might as well just outsource a lot of IT.

Kimberly-Clark is about to launch a global initiative called Project True North to create a single set of standardized analytic tools for the business. What are the goals for that project? With Project True North, everyone will be using the same standard business driver metrics across the globe. For things like pricing analytics and certain types of marketing, we've been doing that consistently. Now [the company is] trying to go to that next layer and provide business leaders with people who are very knowledgeable about the business and understand the analytics. The first implementation will take place in October.

You do quite a bit with SaaS offerings. Is there a downside? People really don't know how hard it is to change the mindset from on-premises to software as a service. It isn't that the technology part is hard. It's that people made a career on these platforms, and when you change to SaaS, and all they're doing is integration work, IT people wonder, "What am I going to do next?" We still value them, but we need to retool them for what their next role is going to be.

– *Interview by* **Robert L. Mitchell**



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OPINION

THORNTON A. MAY

Futuring Should Be Job No. 1 for IT

Futuring is not what you do when you are finished with the imagined real work of operations.

THE ONE THING we definitively know about the future is that we will spend the rest of our lives there. And yet people don't think enough about the future. It's as simple as that.

Most people allocate minute fractions of their time and brainpower to the future. This includes otherwise rational executives who have somehow decided that their days are best spent addressing whack-a-mole operational exigencies, participating in non-value-producing political infighting and documenting regulatory compliance. This is all wrong. We need to make more time for thinking about the future. In IT, *futuring* should be Job No. 1.

The technology industry is all about time. How long tasks take, how long things last, how long it takes to learn a new skill, and how long before it's time to walk away from long-held skill sets. Time-to-mastery and time-to-obsolescence have become critical dials on the CIO success-o-meter. That makes learning curves critically important. Most readers recognize that there are two curves in IT: the curve we're on, and the curve that comes next. In the early days of IT, a CIO's value was in making sure the enterprise was "doing things right" — optimally allocating assets to running the business (that is, being at the top of the current learning curve).

In an environment hyper-accelerated by disruptive technology change, the key part of a CIO's value becomes enabling the creation of businesses that capitalize on the power shifts that accompany technology change. Careers will be made on timing and executing curve jumps successfully.

The first step is to redefine your relationship with the future. Futuring is not what you do when you're finished with the imagined real work of operations. Futuring needs to come first. This means that the quarter before you start the annual budgeting process, you should allocate resources to projects and personnel that will serve as a bridge between the present and the future.

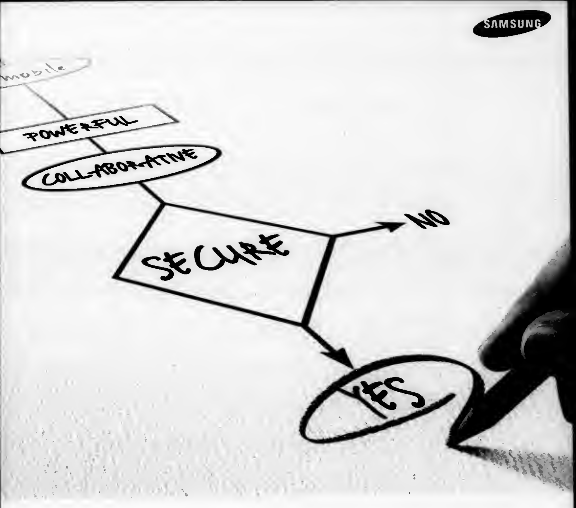
In doing that, it's helpful to keep in mind the Three Horizons portfolio model popularized by Mehrdad Baghai and his colleagues at McKinsey in *The Alchemy of Growth*. Horizon 1 represents a company's current products and services. Horizon 2 projects relate to the next generation of high-growth opportunities in the pipeline. Horizon 3 concepts are next-generation prototypes.

Picking up on that analogy in *Escape Velocity: Free Your Company's Future from the Pull of the Past*, Geoffrey Moore describes Horizon 2 as the "ferryboat from the future into the present. Its job is to take a promising next-generation technology and turn it into a material business." These are opportunities that will become new core businesses, potentially replacing current cash generators. He who owns Horizon 2 owns the future. And who better than the CIO to say, "I will take responsibility for it"?

Escape Velocity shows what can happen when such opportunities are ignored, detailing how the tyranny of today (all those quotidian events that keep you from thinking about the future) derailed some of the most profitable franchises in modern business: AT&T, Digital Equipment, Kodak, Polaroid, Silicon Graphics, Sun, Wang and Xerox.

Cultural historian Rosalind H. Williams at MIT argues that we are living in "an age dominated, if not determined, by technological change." The person who masters technology change will be the hero of the age. ◆

Thornton A. May is author of *The New Know: Innovation Powered by Analytics* and executive director of the IT Leadership Academy at Florida State College in Jacksonville. You can contact him at thorntonamay@aol.com or follow him on Twitter (@deanitla).



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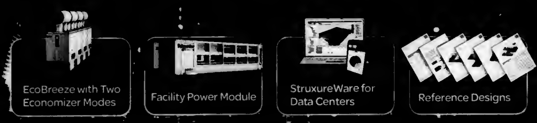
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DAVID SHOEMAKER

Beeline's BI team (from left):

Beeline

Its new **SmartRate BI tool** helps clients make more informed decisions on what they should pay contractors. **BY MARY K. PRATT**

BEELINE BILLS ITSELF as a provider of intelligent workforce solutions, offering software and services to help other companies manage their contingent and project-based labor needs.

Given Beeline's mission, technical product manager Martin J. Matula says it's only logical that the Jacksonville, Fla., company would use BI tools to enhance what it can offer its clients.

"We kind of 'productized' our data — that's a simple way of saying it," he explains.

Matula says the company had long had the idea that it could use its vast volume of data to better serve clients. But it wasn't until 2008, when it created its BI analysis tool on the Tibco Spotfire platform, that the concept really took off.

"That's when we were really able to get into analytics and beyond reporting, so we could combine data sets from all our clients and try to standardize the data. That's when we really stepped up our game as far as business intelligence goes," Matula says.

Now, instead of just producing reports that focus on what *has* happened, Matula says Beeline analyzes data to offer insight about what *will* happen.

Its showcase tool, SmartRate, uses billing rates to make predictions on rates paid to contractors, he explains. Clients use the analysis to make informed decisions on what they should pay their contractors.

"We always had the ability to report, but the visualization tools we now have allow us to go in and look at large sets of data and slice and dice so you can pull insight out of the data in real time," Matula explains.

Not only is the ability to produce this information beneficial to Beeline's clients, but it's also critical to Beeline, because it helps the company differentiate itself and retain clients and generate revenue by offering a new line of data-driven services, Matula says.

John Hagerty, an analyst at Gartner, says few companies are adopting a model like Beeline's, noting that only those with sophisticated capabilities can drive revenue in that way.

Matula says the goal now is to produce and sell more predictive information.

"We want to be consultative to clients," he says. "We want to have the insight to go to clients and say, 'This is what's happening.'" ◆

Pratt *is a Computerworld contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

RICH ROI

While the company won't disclose ROI figures, Beeline reports that it's using its analytic tools to generate market information that it sells to clients, thereby creating a new multimillion-dollar revenue stream.

Booz Allen's BI team (from left, clockwise):

Chris Soong, principal of Booz Allen's Enterprise Reporting and Analytics unit, says the firm has spent $50 million on analytics capabilities over the past three years and has saved "at least tens of millions annually," with much of the savings coming from a reduction in the time it takes to prepare reports using the BI tools. Moreover, the analytics tools helped the firm grow 5% in 2011, at a time when competitors were seeing revenue decline.

Booz Allen Hamilton

Predictive analytics and modeling are helping executives anticipate demand and capitalize on opportunities. **BY MARY K. PRATT**

SEVERAL YEARS AGO, each division at Booz Allen Hamilton had its own reporting processes and systems. But executives knew the McLean, Va.-based consulting firm couldn't grow effectively if it had disparate groups doing their own reporting. They also knew they'd have to provide better information to Wall Street traders when Booz Allen went public, which it did in 2010.

To address those issues, the firm established a new unit called Enterprise Reporting and Analytics (ERA) in 2008, says ERA principal Chris Soong.

Since then, ERA has used business intelligence tools to centralize and strengthen Booz Allen's reporting capabilities. Collectively known as RADAR (for Reporting and Dimensional Analysis Repository), the BI tools feature drillable dashboards that the firm's officers use to manage their lines of business.

In the past 18 months, Booz Allen has started using BI technology for more advanced purposes, employing the tools not only for backward-looking reporting, but also for forward-looking analysis, Soong says.

He says the new focus on predictive analytics and modeling is helping executives shape the direction of the firm to better meet future customer demands. "Now we can see where to invest more [to produce] more revenue and where to invest less," Soong says.

For example, the ERA team analyzed data sets, including the firm's own requests for proposals, to produce metrics showing which disciplines within the cybersecurity practice will grow the most.

"This guarantees we can seize the opportunities and be prepared. We have to plan for staffing and resources to meet the demand we can anticipate from clients," Soong explains.

Neil Raden, an analyst at Constellation Research, says most organizations are still using BI tools for reporting but he has seen companies with more mature BI practices using analytics to drive decisions about strategic growth, as Booz Allen is doing.

That, he says, "is the next wave of successful BI: using information to make the right decisions." ◆

Cancer Treatment Centers of America

CTCA's BI team

Cost savings and potential new revenue are nice, but this healthcare provider is using BI to improve patient outcomes. **BY MARY K. PRATT**

CANCER TREATMENT CENTERS of America upgraded its BI program in March, replacing old software used to produce reports with QlikView to generate information that helps drive better business decisions.

The Schaumburg, Ill.-based healthcare provider uses QlikView to generate real-time information in dashboard form, a feature that in many cases has enabled CTCA employees to produce reports several days faster than they could with the previous BI system, says analyst Pavel Roytburd.

But the organization has seen even bigger benefits by using QlikView to gain insight into clinical trends.

"A part of this is the optimization side, so not only will we be driving that clinical excellence side, but we'll also be using these tools to reduce direct costs and weed out ineffective practices," Roytburd says.

The organization's pharmacy department is on the forefront of using analytics to accomplish these goals, says Joseph Coyne, the department's vice president.

"I was looking for a way to look at hundreds of thousands of lines of data to know what we were doing, and to take an enterprise that spans the U.S. and understand business practices, prescribing practices [and] outcomes, and to understand if one doctor was using something and another doctor was using something different and whether we could use that information to improve patient care," Coyne says. "Then, from a financial standpoint, [CTCA needed] to look at information about vendors and cost and ways to leverage contracting or ways to increase relationships with vendors."

In the future, Coyne says he plans to use QlikView to help predict what treatments will work best on certain patients. "All CTCA does is with the patient first and foremost in mind, and all this is driving toward improving patient care and patient outcome," he says.

Coyne sees the potential to not only gain insights that could improve medical care, but to also generate revenue. He says QlikView's analysis of data on patient outcomes and clinical trials could be used in white papers or sold to the pharmaceutical industry.

In the meantime, CTCA officials say they're continuing to expand the use of the organization's new analytics tool to increase efficiencies, drive down costs and improve patient care. ◆

RICH ROI

BI manager Patricia LaFollette says she can't disclose the amount of money CTCA spent on this year's BI upgrade, but she notes that the organization has already recouped its investment through reductions in the time it takes to analyze data and prepare reports. CTCA officials say the real ROI is in the organization's ability to improve patient outcomes.

Celestica's BI team

RICH ROI

Celestica won't disclose how much it has invested in BI or its exact ROI, but it says its new center of excellence is delivering value internally and for customers. Results include $10 million in savings for a customer faced with repeat returns and savings of $1 million in three months for customers using Celestica's pricing optimization services. The company says it recouped its BI investment in 18 months.

Celestica

Pinpointing why customers return products opened a new revenue stream for this electronics services company.

BY MARY K. PRATT

WHEN CIO MARY GENDRON joined Celestica in October 2008, she says the Toronto-based electronics manufacturing services provider had nothing in the way of analytics. But its CEO saw information as transformative and wanted to build up its BI capabilities.

With a BI system now in place, Gendron says Celestica is proving that information has dollar-and-cents value.

Her team selected and deployed a core analytics platform based on SAP BusinessObjects and SPSS Clementine in 2009. Celestica also created a business analytics center of excellence to deliver business benefits across all core functions.

From the start, Tianbing Qian, the company's vice president of IT, says Celestica figured it could take stored data and turn it into insightful information that would help its clients.

Qian points to the use of its BI program to analyze repeat returns, whereby a consumer returns the same item for repair work multiple times, cutting into the profits of Celestica's clients and hurting brand loyalty. Working with one customer in a proof-of-concept case, Celestica's Preventive Return Analytics Project combined 80 million records of product life-cycle data from the customer, competitors and Celestica to help the client identify and remedy the problem. The result was a $10 million cost savings for that client.

Qian says that Celestica soon found that other customers wanted similar analysis of data — and that they were willing to pay for it. "Our IT department is building up its forecast analytics service, and it is becoming a new revenue source," Qian says. Working with senior business leaders, the analytics team is developing additional revenue-generating services in other areas, including demand forecasting, inventory management, component pricing, sales data analysis and performance management.

John Hagerty, an analyst at Gartner, says only a small percentage of companies are mature enough in the use of BI tools to harness data, analyze it and make their findings available to others for a profit.

"You're starting to see companies that see information as an asset," he says, "but that is more on the sophisticated side." ◆

Maverick's BI team (from left):

[illegible] ROI

Maverick executives won't reveal exact ROI data, but they say that the BI project's benefits include a decrease in the number of accidents and improvements in fuel efficiency and driver retention. The cost of hiring new drivers and bringing them up to full productivity averages $7,000 per driver. At 64%, Maverick's annual driver turnover rate is well below the 80% to 90% industry standard — meaning driver retention alone is saving the company about $1.34 million per year.

Maverick TRANSPORTATION

Real-time data lets this trucking company boost driver productivity without sacrificing safety. **BY SUE HILDRETH**

FOR MAVERICK TRANSPORTATION, a national long-haul trucking company with more than 1,200 drivers on the road, even small changes to processes can lead to swings of hundreds of thousands of dollars on the bottom line. Changes in routes, driver training, gas mileage, accident rates — they all affect profits. Until recently, however, the company couldn't easily visualize real-time trends or accurately predict future outcomes.

"People were running a lot of reports, but not getting real-time information," says Wayne Brown, vice president of IT. "They were basing decisions on data that was days or weeks old."

That changed when Maverick's IT department recognized that the company needed centralized data and the ability to do predictive analytics. The team integrated disparate financial systems using Information Builders' WebFocus Developer Studio, a BI development tool.

"We realized we had a very powerful tool that we could leverage across the enterprise," says Brown.

The operations, IT and safety departments, in particular, wanted to gain insight into what factors influenced safe driving records and how they could boost driver productivity without adversely impacting safety.

Brown, along with three business systems analysts, integrated data sources and created dashboards that business managers can easily understand and use. To create predictive analytics models for Maverick's data, the team partnered with Fleet Risk Advisors, a trucking industry analytics firm.

To integrate all of the data sources, they used several integration technologies, including Web services, adapters from vendors and old-fashioned hand-coding.

Today, Brown says that three full-time analysts develop dashboards for virtually every department, for functions such as operations, safety, maintenance and financials. But all of the dashboards access the same database, so users can get a wider view of the enterprise, if they want.

"Getting information in real time is very important," says John Coppens, vice president of operations. "Before, I could institute changes but wouldn't see the results until the monthly or quarterly report. Now you can see the results daily and weekly. That's made us much more nimble."

Coppens and other users have the option to view data in a variety of ways, including drilling down into individual driver or truck performance. "We need to use these metrics to be aware of the factors that impact productivity every day," he says. ◆

The Minnesota Department of Education's BI team

Minnesota DEPARTMENT OF EDUCATION

Data-rich, fast-access BI dashboards replaced overly complex reports that had little value. **BY SUE HILDRETH**

RICH ROI

When its BI system becomes capable of generating more reports, the state of Minnesota hopes, among other things, to be able to determine how well students perform upon entering a school and how well they perform when they leave, what percentage of "average" students end up in high-level college prep classes in high school and how well graduates do when they enter college.

THE MINNESOTA Department of Education, like a lot of state education departments, is tasked with collecting, evaluating and making available volumes of data on every aspect of its 2,000 schools and 350 school districts. It tracks school attendance scores, dropout rates, performance by grade level, test results, achievement differences between student subgroups, student population growth trends, expenses and much more.

While the department maintains a central repository for much of its data, some data has inevitably wound up in individual silos, such as on school servers and employee desktops. Getting to that data — and standardizing it — was a major challenge.

Another problem, as Cathy Wagner, the department's business analytics and data manager, explains, was the complicated presentation of data in the Excel reports that employees used to generate. "We had data that was mechanical-looking, and people complained they couldn't do anything with it," she says.

At the same time, administrators wanted to combine data from school districts in order to better see trends over weeks, months or years.

So earlier this year, the IT department began consolidating data — mostly in mainframe flat files or in Microsoft SQL Server systems — into reports in an Oracle Universal content management repository, which will be kept at a state data center. Developers used WebFocus Developer Studio and Flex Enable to develop dashboards that end users — administrators, teachers and parents — can easily access to find the data they need. The dashboards also let users drill down into specific data types. Adobe Flex graphics help make the data more interactive.

The system, which was paid for with grant money, is still under development. The main task now is the migration of data, but many administrators are already using the system.

Meg Litts, whose title is data coach, says she likes the graphical charts, which display data vividly, and the easier-to-use dashboards. "It used to be painfully slow," says Litts. "Now the speed is dynamic, and there are graphical charts, not just tabular data."

The system will initially be used in an initiative aimed at lowering dropout rates. Employees will try to pinpoint which types of students aren't making it and identify the risk factors they have in common — such as homelessness or poor English language skills. "Schools will get the dropout data and patterns for their students and can then do intervention programs," says Wagner. "They can target programs more effectively, based on current information." ◆

Hildreth *is a veteran IT writer based in Waltham, Mass. She covers enterprise technologies, from BI and CRM to social media and IT management.*

Parallon's BI team (from left):

DANA THOMAS PHOTOGRAPHY

Parallon BUSINESS SOLUTIONS

Key metrics for this healthcare business services provider are now all in one place and available to busy executives via mobile devices. **BY SUE HILDRETH**

RICH ROI

It used to take 32 employees three to five hours a month, or 100 to 150 hours overall, to pull data from various sources to create new reports for upper management. Today, that process takes about 15 seconds. With the average annual salary for hospital administrators and managers at about $85,000 (according to figures from the Bureau of Labor Statistics), that could equal savings of $6,000 a month per manager.

RUNNING A HEALTHCARE BUSINESS is a complex challenge. It requires administrators to stay up to date on hundreds of performance metrics — everything from bed occupancy rates and staffing levels to insurance reimbursements.

To quickly make strategic decisions based on accurate and timely information, administrators need a flexible and user-friendly BI tool to keep tabs on daily operations and long-term trends.

In 2011, Parallon Business Solutions, an offshoot of HCA, one of the largest healthcare chains in the country, wanted to improve the usefulness and accessibility of the volumes of data stored in its Teradata Patient Accounting data warehouse. The goal was to make it easier for executives to quickly see changes in a wide variety of performance indicators.

Parallon opted to start its BI project with its Business Performance Group, which provides services to HCA and other client hospitals. The group already had a tool that managed 45 reports on key revenue indicators. But the reports were neither sufficiently user-friendly nor timely.

"The executives are very mobile, especially if they're overseeing multiple facilities," says Shannon Dauchot, senior vice president for revenue cycles in Parallon's Business Performance Group. "They want to be able to see their key indicators wherever they are."

So Parallon developers and consultants from Pandara, a BI services company in Tampa, Fla., created a series of dashboards using MicroStrategy, a BI application that pulls data from the data warehouse into cubes, which are miniature, multidimensional databases assembled with data from the main database.

The dashboards provide summary views of a wide swath of data; executives can then drill into that data and pull up more detailed dashboards on specific metrics. To be more useful to business users, each dashboard also provides graphical displays of the data.

"Before, you might have to go to five or six different places to get the information you needed. Now all of the key metrics are centralized," says Michael Taylor, Parallon's BI manager.

Even better, the dashboards can be viewed on iPads, and summary versions can be viewed on iPhones, which many of Parallon's financial executives carry. Other business groups are also getting their own dashboards, says Taylor.

"We have 23 measures in accounts receivable and cash and payment compliance on the dashboards," says Chris Harrison, director of financial analysis and reporting. "Now, in 15 seconds we can get data that would have taken two to three hours to pull." ◆

Richardson, Texas

Agencies citywide dig deeper into data on crime reports, ambulance dispatches and home values. **BY MARY K. PRATT**

The city of Richardson's BI team (from left):

RICK MCGARRY, CITY OF RICHARDSON

THE CITY OF RICHARDSON'S MISSION, like that of any government, is to serve its citizens effectively and efficiently.

To do that, this Texas city scrapped its outdated reporting systems and deployed a more agile application, says Eric Matthews, the city's deputy CIO for application development.

"We wanted a single environment for users and for us to support. We wanted a straightforward system," Matthews says about his decision six years ago to deploy Information Builders' WebFocus. He says he opted for WebFocus also because of its geographic component, a feature the city's water department had identified as desirable.

Matthews says the biggest ROI has been the dramatic drop in the time it takes city workers to produce reports. The code enforcement department, for example, can now prepare reports in several minutes rather than several days. Similarly, the police department cut the time it takes to compile monthly crime reports from two days to just minutes.

That time savings was a great benefit, and now the city is finding other uses for the BI system, says Matthews, noting that city officials are using it to access and analyze information when making critical decisions. For instance, WebFocus allows police officers to use their smartphones to access active reports pulled from the department's computer-aided dispatch system and drill down for information such as the history of emergency calls from a particular location.

Also, to determine if it should seek city funding for another ambulance, the fire department used WebFocus to analyze the number of times that all, or nearly all, of its ambulances are out on emergency calls.

"It's information that would be too cumbersome to track and report through the other systems we use when calls go out," says Ed Hotz, the fire department's assistant chief of administration. He noted that the statistics produced by WebFocus did prompt the department to seek funding for an additional ambulance this year.

Matthews says elected officials are also using the BI tool. For example, a city counselor who wants to determine which neighborhoods should receive betterment funding is using it to analyze average home values, percentages of rental units and tax data from several sources. ◆

BIG ROI

City of Richardson Deputy CIO Eric Matthews says the city hasn't calculated in dollar figures how much more efficient it is since it deployed its BI system, but he says the ongoing savings in labor when it comes to producing reports represents the biggest financial benefit to date.

Seminole Gaming's BI team (from left):

GERLINGE © MICHAEL PHOTOGRAPHY

Seminole Gaming

Its in-house BI tool gets inside customers' minds to help boost its most effective marketing campaigns. **BY SUE HILDRETH**

SEMINOLE GAMING is a chain of seven casinos in Florida, ranging in size from a small 30-machine location in the Everglades to a 5,000-slot-machine mega-casino in Tampa. To be successful, the casinos need to keep loyal customers coming back and attract new ones with the right mix of games and amenities.

A complex range of variables can make the difference between profit and loss. The types of machines and card games, the floor plan amenities, marketing promotions and a multitude of other factors can significantly change the traffic and profitability of each casino.

One factor that greatly affects success is direct-mail marketing, which Seminole relies on to bring in new and inactive customers. In 2008, the company decided to invest in a BI tool to better predict the outcome of direct-mail campaigns. At the time, an outside direct-mail business managed Seminole's customer lists and data warehouse, making in-house BI development difficult.

So in the spring of 2009, the company moved it all in-house and began creating a BI system designed to not only track direct-mail campaigns, but also monitor customer activity and financial trends.

Ralph Thomas, vice president of strategic analytics and database marketing, and two other IT employees developed a custom system using an Excel front end with an open database connectivity adapter to a SQL Server-based data warehouse. With a SAS Rapid Predictive Modeler, the team created predictive models for different aspects of the business and added data graphics with BIS2 Data Visualization's Super Graphics.

The team integrated 14 data sources, including campaign management, general ledger, point-of-sale and casino-specific player tracking and slot floor systems. All of the data had to be cleaned and audited, so the team members created an automated process for staging, cleaning and analyzing the data for errors before loading it into the data warehouse. They then built multiple dashboards for a variety of business concerns, starting with direct-mail reporting and analysis.

"We save a ton of money by not mailing to people who are not going to respond," says Thomas.

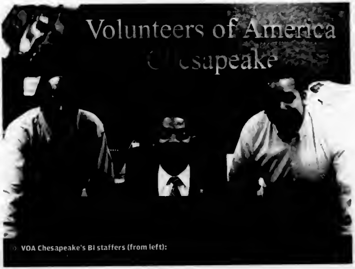
Today, the company has two primary dashboards that send automatically generated reports to senior management on a daily basis. Dozens of other dashboards provide data and graphics to line-of-business managers to show them how the business is meeting its key goals.

Seminole's BI system is also user-friendly, with an Excel front end — which almost all managers have used — and data visualization graphics and dashboards to keep track of real-time metrics.

Amanda Totaro, vice president of marketing at the Seminole Hard Rock Hotel & Casino in Hollywood, Fla., is a fan of the system. "There's no limit to the amount of knowledge I can get on our customers," she says. ◆

RICH ROI

Seminole estimates that its BI system boosted its incremental profit by $26.8 million as of early this year. That figure includes $8.4 million from improvements in gaming operations and $13.3 million in additional profit from changes to 150 marketing campaigns that were made as a result of BI analysis.



›› VOA Chesapeake's BI staffers (from left):

Volunteers *of* America Chesapeake

Hit hard by a slow economy, this charitable group uses BI to raise money and predict fluctuations in resources. **BY SUE HILDRETH**

IF THERE'S A HOMELESS SHELTER, drug abuse recovery program, senior center or housing services agency for the disabled in your community, there's a good chance that it's supported by the Volunteers of America, which has 36 affiliated chapters around the country.

Like all VOA chapters, VOA Chesapeake relies on contributions and volunteers from a variety of corporations, charitable groups and individuals to support its programs. In 2010, however, the Lanham, Md.-based organization was suffering from the downturn in the economy and needed better analytics tools to understand how it could use its resources more efficiently. VOA Chesapeake also wanted to improve the quality of the data it uses in its appeals to donors.

"We needed a robust set of data that we can share with [donors] to convince them of results," says Franklyn Baker, the group's chief operating officer.

VOA Chesapeake also needed to be able to more accurately predict fluctuations in donations, volunteers and other resources. Predictive analytics would allow it to factor in assumptions about trends such as dips in the economy or upswings in volunteerism.

Lacking in-house BI expertise, VOA Chesapeake brought in The Cambridge Don, a Chicago-based company that develops adaptive expert systems and offers a SaaS-based BI and predictive analytics product called Talent Chaser, which can be adapted for different business uses. VOA Chesapeake began using Talent Chaser to examine its performance evaluation and new-hire screening processes. After successfully increasing employee productivity while cutting the number of people on its payroll by 100, the organization started customizing Talent Chaser to enable it to handle additional business analytics.

Today, VOA Chesapeake can run reports and forecasts on just about any aspect of its operations and charitable services, from how volunteerism correlates with financial donations to what factors are most helpful in getting people to complete a substance abuse recovery program or leave a homeless shelter with a job and a new place to live.

The data also helps VOA Chesapeake departments gain insight into their operations and program success factors. For example, Kyoto Queen, the group's vice president for mental health rehabilitation programs, says, "I regularly check the program operational and outcome measures, and [use the data to] develop intervention strategies." ◆

BIG ROI

Many factors go into calculating the ROI of VOA Chesapeake's BI system – everything from increases in funding and volunteerism resulting from campaigns highlighting program success rates to improvements in employee productivity. COO Franklyn Baker says data on evidence-based outcomes helped VOA Chesapeake win a $1.3 million contract to house returning veterans in Washington.

Security Manager's Journal

MATHIAS THURMAN

Closing Off an Outlook Hole

Trouble Ticket

» Outlook Anywhere makes it possible for users to download email to any device – and leave sensitive documents on unsafe PCs

» Restrict the use of Outlook Anywhere to clients that are behind the firewall

IN MY YEAR AND A HALF or so at my current company, I have slowly built a real security program where none had existed. I've introduced event management and data leak prevention. We now filter URLs to keep employees off of websites that present security or legal risks to the company. I've introduced two-factor authentication, locked down mobile devices and written and promoted a slew of modern security policies and processes.

But as I said, this has been a slow process, and I still have a lot of work to do. One neglected area has been email. Email is probably the most vulnerable repository of documents in our company. But it's also the most widely used application and is a huge business enabler, so I've been reluctant to address its security shortcomings head on. After a close call involving some of our intellectual property, however, I can no longer put this off.

We have approved three legitimate ways for employees to access their Exchange mail remotely. The first is via Outlook Web Access (OWA), a Web-based version of the Microsoft Outlook client. I like the fact that OWA mail doesn't reside on the user's computer unless the user takes extra steps to save it locally. And for an additional level of security, I plan to require two-factor authentication for access to OWA.

The second way to obtain email remotely is through ActiveSync, which we use to synchronize email, contacts and calendar information with mobile devices. To enhance security with this option, we push a security policy to all devices that synchronize.

The third way to access email remotely, called Outlook Anywhere and formerly known as RPC over HTTPS, keeps me up at night. With Outlook Anywhere, employees can directly connect their Outlook clients to our Exchange server. It isn't devoid of security features: The connection is secure, and users must enter their network credentials before email can be downloaded to or sent from the client. But once downloaded, any emails, attachments, contacts or calendar items remain on the device, even after the application has been closed. And the device could be anything from a relative's or friend's PC to a computer in a public library or an Internet cafe. That means that sensitive company documents could be lying around on devices accessible by pretty much anyone.

the discussions about security! **computerworld.com/blogs/security**

A Close Call

A few weeks ago, the manager of a local hotel called to tell us that the hotel staff had discovered over 1GB of our company email on the computer in the hotel lobby. One of our IT staffers headed over there for a look and found that the email belonged to one of our sales representatives. I told the IT staffer to copy the email to a .pst file and remove it from the hotel computer as best as possible.

We were lucky; this could have turned out much worse. We do a lot of business with that hotel, and the manager, eager to maintain good relations, assured us that the PC would be re-imaged.

A review of the .pst file showed that the sales rep had left behind sensitive corporate data, including information about pending deals and copies of contracts and internal memos, plus a good deal of his own personal information, including some data related to finances.

I now plan to restrict access to Outlook Anywhere to devices located behind our firewall. Remote users will need to sign on to the full-client VPN, and they are allowed to do that only from company-issued PCs. This constitutes a cultural change, so I expect some grumbling, but given the risks involved, I think it's justified as part of my efforts to close serious security holes. ◆

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

A local hotel recently discovered over 1GB of our company mail on the computer in its lobby.

Security Manager's Journal

MATHIAS THURMAN [illegible]

Closing Off an Outlook Hole

With Outlook Anywhere, users can download their mail to untrusted PCs and leave sensitive documents behind.

IN MY YEAR AND A HALF or so at my current company, I have slowly built a real security program where none had existed. I've introduced event management and data leak prevention. We now filter URLs to keep employees off of websites that present security or legal risks to the company. I've introduced two-factor authentication, locked down mobile devices and written and promoted a slew of modern security policies and processes.

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computerworld.com/blogs/security

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Trouble Ticket

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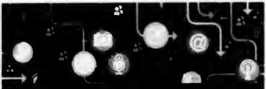
Career Watch



SOCIAL MEDIA AND JOBS

More than one-fifth of all jobs in the U.S. are posted to all three leading social networking sites, LinkedIn, Twitter and Facebook, [illegible]

Site	% of U.S. jobs posted there	Most active states for posting jobs on social networks:
	77%	**1**
	54%	**2**
	25%	**3**

Matchmaker, Matchmaker, Find Me an IT Job

Path.To (that's the company's Web address, by the way) is marketing itself as "eHarmony for IT jobs." Explaining what that means, the company says that its Path.To Score ranking system "analyzes the unique characteristics of each applicant, business and position to determine compatibility." The service has been rolled out to the San Francisco Bay Area, New York, Chicago and Boston.

ASK A PREMIER 100 IT LEADER

Bill Brown

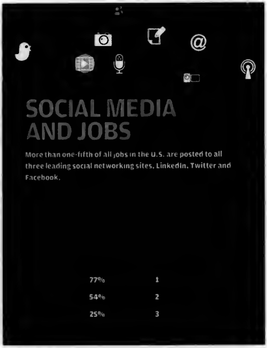
[illegible] job boredom [illegible] résumé gaps.

When I was in school, I worked at a small company, doing just about everything imaginable related to computers. Since then, I have leveraged that experience and my degree into a job at a large corporation, where I have moved from the help desk to systems administration. The pay is much better than what I earned at my old job, but the work is far less interesting. I'm not sure what I want to do, but I sometimes think about finding a job with broader duties out of sheer boredom. Is that crazy, or just unwise? No, that isn't crazy or unwise. Orientation as a specialist or generalist is a common issue in determining job satisfaction and isn't always an indicator of compensation value. There is a lot of information in the public domain as well as exercises you can do to help you identify the realm in which you will be more satisfied. You will also find that this will change over time. It's similar to the issues that one may wrestle with when considering whether to be a manager or an individual contributor. In your case, try to identify what aspects of the generalist help desk job kept you satisfied and then identify what is missing now. And most importantly, share this feedback with your manager so you can work out a solution to find a more fulfilling role together. The fact is, there may be a lot more interesting work for you to do that your manager would happily delegate or reassign to you.

If you have a question for one of our Premier 100 IT Leaders, send it to **askaleader@computerworld.com**, and watch for this column each month.

I left a QA job and moved to another city for personal reasons (I was in a relationship that has since ended). For the next two years, I worked as a waitress. Now I'm back home and eager to resume my professional life. In the interviews I've had so far, I have stumbled when asked about the gap in my résumé. It seems too personal to discuss in a professional interview, and because I now feel like I made a mistake, I can't really talk about it well. How should I handle this? The best way to address gaps is head on. Believe it not, many of us – including many hiring managers – have had similar episodes in our own lives. In this case, I would share that you made a personal commitment to a significant other that caused you to temporarily interrupt your career. Oftentimes, you can parlay your interim experiences into a selling point, and many applicants sometimes call this out in "Additional Experiences" sections of their résumés. In general, just provide the facts, don't feel the need to share details, and turn the conversation back to your professional qualifications.

Career Watch



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ASK A PREMIER 100 IT LEADER

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Avid's CIO has advice on **job boredom** *and* **résumé gaps.**

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IT|careers

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:

Quantitative Analysis (Mountain View, CA) #1615.1872 - Research methods for improv search engine co tech. Exp incl: C++, Java, Python, or similar adv program lang; research & dev of stat data analysis & modeling method; leadership of investig & design of experiments; adv stat methods & result interpretation; & R stat sw or another adv stat sw package.

People Technology & Ops Analyst (Mountain View, CA) #1615.3058 Formulate, implement & evolve Google's internal tech tools for HR proj, processes & systems. Exp incl: global-region specific staffing job ad guidelines & practices; staffing appl tracking syst; staffing ops in proj managing with cross funct teams; vendor analysis of key staffing metrics; & usage of enterprise appsto provide training programs for staffing org.

Business Oper Assoc. (Mountain View, CA), #1615.4035, execute high level bus ops and strat proj defined by Google's exec team. Exp incl: wireless or wireline communication as a vendor, operator, or strategic consultant in internet access field & each of the following for Fortune 500 co: business prob structuring, mkt research & analysis, data mining, & competitor benchmarking; identify strategic bus oppor & oper initiatives, incl expansion into new business lines &/or new mkts; perf financial model; & bldg & leveraging relationships w/ appropriate contacts or stakeholders & across funct.

Hardware Eng (Mountain View, CA) #1615.3386 - Design, develop, modify &/or test hardware needed for various Google projects. Exp incl, design flow of analog & mixed signal integrate circuits, design flow exp inv each of the following: amplifiers, analog filters, regulators, analog-to-digital converters, digital-to-analog converters, & design at 90nm or finer process nodes.

SW Eng Positions (Mountain View, CA). Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp include:

#1615.3465 - Java, C/C++, databases; data struct & algorithms; web tech; comp ntwks, design patterns, oper syst, & parallel program

#1615.1168- C++, Java & Python, linear/integer prog; parallel & distr computing for large-scale sys, design algorithms & randomized algorithms, & dynamic prog

#1615.1034 - dist sys, storage sw; data org, indexing & data extraction, math modeling; & regression analysis, web advertising, keyword recommend, click through rate prediction, & mach learn.

#1615.1929 - C++ & dev & design of large sw sys. Python, dist computing; info retrieval; data mining, & mach learn.

#1615.1095 - feed mgmt sys, dependency injection & obj relation map, finan reporting sys, web svcs & appl servers incl Tomcat & J2EE, bldg highly scalable & high redundancy sys, & web crawl & scrap

#1615.777 - C++, Python, adv algorithms & analysis; stats; mach learn, multithread prog & debug, optimization algorithm designs; & scien computing.

#1615.481 - C; C++; Fython, Bash, Linux kernel; Linux kernel drivers; Linux ntwk sys, Linux debug tools, distr comput; ntwk protocols, & multi-core & multi-thread comput.

#1615.807 - Java or C++; Java appl & design patterns; oo program, HTML & web dev; design algorithms, & parallel & dist syst.

#1615.886 - C++; multithread, STL; Jscript, Java, front-end perf; Guice bldg large scale or complex sys, HTTP; web browser; compilers, dist build sys, automated test platforms, & Web access or perf topics.

#1615.2387 - signal process, incl speech & audio coding, & music acoustic analysis model; mach learn algorithms, music or multimedia metadata process sys & data quality analysis, large-scale dist data process & storage sys; coding in C, C++, Python, Java, & Matlab, & music or multimedia industry.

#1615.3204 - C++, Java, Python, Linux, HTML, Perl, algorithm dev & optimiz; design & dev of code, troubleshoot live sys, & release engineer.

#1615.747 - sw dev, large data set analysis; stat & numerical analysis; & parallel & dist comput. Exp to in clude at least two of the following: C; C++; Python, Java, JavaScript; Perl, & Go.

#1615.1171 - appl of stats & math to large-scale datasets; research, design, & implement of mach learn & data mining algorithms, & storage & process large-scale data on distr sys & their optimization.

#1615.859 - highly available dist storage sys, large-scale dist sys sw design & dev; Unix or Linux, comp security concepts; debug tools, such as GDB & Valgrind, C or C++, & multi-threaded program

#1615.1456 - C++ & STL, multithread, & image process

#1615.1899 - C or C++; Java Servlets; GXP, AJAX, XML, & XSLT; Python, info retrieval algorithms & implement; security protocols, incl SAML, Kerberos, NTLM, LDAP, & Client Certificates, & implement & debug dist sys protocols.

#1615.1165 - sys design & implement; require gather; funct speci writing, arch design, implement, test, & deployment; C or C++; oo program & design; high vol data analysis & database, UNIX or Linux; datastruct & algorithms.

#1615.2067 - programming & app dvlpmt; user-facing appl dev & user exp design using the Android frame works; & concurrency, algorithms, & data struct in Java.

#1615.3802 - algorithms, info retrieval, design & arch for high query per second system, VLDB perf tuning & optimization, parallel computation, & oo prog.

#1615.1677 - Gather & synthesize massive amounts of info to tackle highly strategic & difficult bus problems for the executive team at Google. Exp incl: bus analysis & plan (gather & analyz large amounts of data), cross-func bus & process mgmt; comp sys arch; math & stat modeling, & oo program lang

#1615.3052- Corp Operations Eng Position (Mountain View, CA) - support of large scale & multi platform environ, Windows, Linux, & MacOS platforms, sys integrat & centr mgmt of multi platform environ, IT infrastructure for co w/branches or remote offc, & support of distr sys & virtualization tech; IT security oper; & H323 protocol.

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SAS Business Analyst - metro New York City, NY - Code #NY220

Clinical SAS Programmer Analyst - metro Nutley, NY - Code #NU100

Programmer Analyst - metro San Jose, CA - Code #SJ150

WebSphere Administrator/ Developer - metro Warren, NJ - Code #WAR100

Mainframe Programmer Analyst - metro Westlake, TX - Code #WL100

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Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:

Technical Program Manager, (Venice, CA) Manage regional and global technology programs for internet search engine company. Exp.incl #1615.520 - WLAN or WiFi; broadband Internet access using two-way satellite technology & Aruba Networks WLAN sw. Up to 30% travel req'd.

Software Engineer Position (Venice, CA): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp incl: #1615.1333 high-volume, resource efficient process, efficient data struct & algorithm design, large-scale data analysis, stat analysis, scientific visualization; ai; & natural lang process

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Interested candidates send resume to. Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:

Site Reliability Eng (San Francisco, CA) #1615.3008 - Prov tech support necessary to ensure full availability of Google online services. Exp incl; tech troubleshoot; perf tuning, Unix or Linux; distr computing; and at least two of the following: Python, C, C++, Java, Perl, or Shell. Up to 15% travel req'd.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn. Lisa Harrington. Please reference job # below

Software Engineer Positions (Kirkland, WA): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp Inc.:

#1615.1801 - Parallel & distributed computing on Linux clusters, large-scale data process analysis, & visualization on dist sys , UNIX or Linux prog, incl socket prog, multi-process prog, & inter-process communication, & large-scale search engine dvlpmnt, (GIS) dvlpmnt & large-scale geospatial analysis

Software Eng in Test - #1615.2877 - infrastructure quality assurance; dist sys, stat analysis, C++, Java, Python, & Shell Script, & Linux/Unix.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:

Software Engineer Position (San Bruno, CA): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp incl:

#1615.622- video game program, engine dvlpmnt on Xbox 360, PlayStation 3, or Wii, & C++.

EPI-USE America, Inc.(Atlanta, GA, Sacramento, CA, or othr work sites as assigned)- SAP HCM Payroll & Time Team Lead. Dir., dsgn & dev SAP Payroll & Time Mgmt Solutions. Trvl to othr work sites as req. for any assgn proj. Reqs Bach deg. or its for. deg. equiv in Comp. Sci., Eng. or closely rel. field, + 5 yrs of exp. in IT consulting. Std exp. must incl. 2 years of exp. w/ config. & integration of PLM Pkg. Exp. must incl. 1 yr working w/ SAP HCM Impl. of Time & Payroll modules. Ext. trvl is req. Apply: H. de Villiers, Ref: SG, EPI-USE America, Inc., 2002 Summit Blvd., Suite 825, Atlanta, GA 30319 (No Calls).

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Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:
Software Engineer Position (San Bruno, CA): Design, develop, modify, and/or test sw needed for various internet search engine co projects. Exp. incl:
#1615.1593- proj background in AI; mach learn & data mine; algorithm dvlpmt; design & implement of scalable back-end apps; & process of large amounts of data.

Research in Motion Corporation (US), San Diego, CA, positions are available:
CA7010 - Team Lead - Platform SW Services
CA7012 - Software Developer

Research in Motion Corporation (US), Sunrise, FL, positions are available:
FL7011 - Power Systems Designer

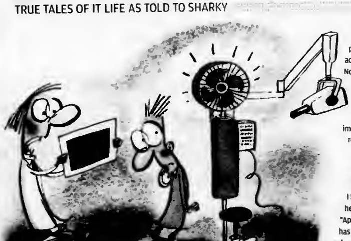
Submit resume to Research in Motion Corporation (US), to P.O. Box 141394, Irving, TX, 75014-1394 U.S.A., referencing appropriate job title and requisition number.

Surya Systems is hiring Lead Application Developer in Trevose, PA. Duties: Design, develop, implement & support all.Net applications. Req. BS/foreign equiv. In CS, CA, Software Eng., CIS / Related Req. 5 yrs Relevant Exp as SW Consultant, Engineer/ related. Req. exp. in design & performance tuning work with relational databases such as DB2 & SQL Server, VB.Net, ASP.Net & MVC Framework. Must be able to travel temporarily/ relocate to client sites through U.S. Mail resume: Surya Systems Inc.: 1 Neshaminy Interplex Dr., Ste 101, Trevose, PA 19053. Attn. HR.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:
Ad Serving Solutions Consultant (NY,NY): #1615.1115 Function as the internal or client-facing Google product expert. Exp incl: HTTP Protocols, SQL, HTML, & Jscript; client interaction in consult firm; proj mgmnt; translation of bus needs into tech req; & tech background in prod mgmnt processes. Up to 20% travel req'd.
Account Analyst; (NY, NY) #1615.1542 Solve customers' business issues with Google technology. Exp incl: ad serving technology; global behavior data providers; global online ad exchanges;demand side platform; performance-based optimization on digital ad campaign; explain complex tech concepts to non-technical audiences; & customization of digital mktng solutions. Up to 40% travel req'd.
Product Specialist (NY, NY) #1615.1143 Define product vision & strategy for new internet products & internet search co projects. Exp incl: web analytics, search engine rankings; proj mgmnt; tech troubleshoot; manage prod life cycle, manage sw dev & R&D; & new prod integration.
SW Eng Positions (NY, NY). Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp. incl:
#1615.1148- C/C++; data struct; algorithms; complexity analysis, multithread; Unix/Linux; & perf debug optimization
#1615.3508 - arch, design, program & tech lead roles; bus analysis for sys inv cash flow, acct, & billing; Java, J2EE pltfrm & concurrent program; design & implement large-scale dist sys, databases, rule-based sys, message, & data mining, tech writing; design & implement fault tolerance & recovery methods for dist sys; & prob & perf analysis of large scale apps
#1615.362 - design & implement of large scale distributed systems; production environ, incl monitor & troubleshooting; file systems; C++ & STL.
#1615.3[illegible] - oo prog; Java multi-thread prog; Google web toolkit, web dev; custom swing components; Selenium; Lucene Apache API, integrated dev environ, JAXB, OSGI; & web framework security.
#1615.3[illegible] - Java, HTML, CSS, Jscript& XML, regular expression, create platform components, dev sw sys, design & implement of desktop & web apps, & oo sw
#1615.2[illegible] - map prod & infrastruct, sw arch, data analysis; C++, & large data sys
#1615.[illegible] -: Java, compilers; algorithms, OSGi, Swing; multithread; Svnkit; data index & search; manage & implement SW Dev Life Cycle.
#1615.1313 - Django, HTML & CSS; C++, Python, Jscript, & Matlab; MapReduce, probability & linear algebra; SQL or similar query lang; data struct algorithm implement; & stat analysis & mach learn algorithms.

SHARKTANK

TRUE TALES OF IT LIFE AS TOLD TO SHARKY



HAL MAYFORTH

Blade Runner

First-level support pilot fish at this hospital gets a call from the secretary at the dental clinic: "The digital X-ray unit wasn't working. That's all she knew," fish reports. "Lacking specifics, I figured it was 50-50 I could fix it. The lead dentist met me at the front and escorted me back through the patient area to the room with the X-ray unit. When she told me the image quality was poor, I figured it needed calibration, so I said I was extremely pessimistic about my chances of fixing it. The dentist passed some plates through the unit and said, 'Yep, it's still doing it.' The image had lines through it like there was some kind of pulse hitting it. Then I turned to the X-ray unit – which had a running fan sitting right on top of it. At that point, I saw my odds improving."

Nobody, Redefined

Senior partner at this accounting firm loses his iPhone, complete with all the confidential client email and information on it. "Two days later, his executive assistant emailed the help desk to advise us that he had lost the phone and was on his way to get a new one," reports the IT manager pilot fish there. Fish wants to make sure a remote wipe command is sent before the old phone's network access is cut off, so he quickly logs in to the Exchange server – and sees that *two* iPhones are connected to the partner's account, both actively syncing email. With growing concern about security, fish calls the assistant. Do you know of any other iPhones connected to the partner's email account? he asks. Nope – she's absolutely positive that nobody else has access to his email. Fish immediately sends remote wipes to both iPhones. "About 10 seconds later, the executive assistant called, crying that I had just wiped out her iPhone!" says fish. "Apparently no one else has access to this partner's email *except* the assistant."

If We Could Answer That . . .

All network printing has gone down, and IT is scrambling to find the problem. "In the meantime, our help desk phone is ringing off the hook," says a pilot fish on the scene. "As fast as a call is answered, the next call comes in. We figure it would be a good idea to send out an email explaining the situation to the department heads and the designated IT contacts in each department. So out goes the email. For the most part, the calls soon stop – except for one from a department contact, who asks, 'How can I print out this email so I can distribute it to my co-workers?' After a few seconds of shocked silence, our help desk person quietly informs the user that he'll have to pass that message on verbally."

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BART PERKINS

The Value of Skeptics (of the Right Kind)

WORKING WITH SKEPTICS can be painful. They consume valuable time with questions that can seem pointless. Nevertheless, the right kind of skeptics can be highly valuable, especially during project planning.

Skeptics come in two flavors: negative and loyal.

Negative skeptics actually hope for failure. Their dire predictions never end. They frequently slow progress by revisiting previous decisions. They can demoralize their teammates and derail projects.

Loyal skeptics, however, are invaluable. They challenge commonly held beliefs and ask questions others avoid. (Like toddlers, their favorite question is "Why?") They help teams anticipate problems and develop contingency plans. When disagreements arise, they force debate until solutions are developed. Loyal skeptics can come from any department in the enterprise and any level on the org chart, but they are all competent, respected and objective. The best skeptics have widespread organizational creditability, and their seal of approval helps convince others of project viability.

It can be difficult to distinguish between negative and loyal skeptics. The difference often lies in their objectives and motivations. Negative skeptics criticize everything; loyal skeptics scrutinize everything. Where one is mainly interested in finding fault and pointing fingers, the other seeks to clarify and improve project planning and execution. Negative skeptics are often motivated by power or politics, loyal skeptics by a desire to reduce risk and thus help ensure project success.

Once they're comfortable with the final plan, loyal skeptics sometimes function as guard dogs, protecting the project from external disruptions. They push back against the inevitable requests for additional functionality in the middle of a project, questioning the impact of proposed changes. They will fight to defer new features in order to protect schedules and resources.

Projects that produce no benefits make organizations reluctant to invest in other IT-enabled initiatives. Skeptics often question a project's business beneficiaries closely about how they will achieve planned benefits. After the project is complete, loyal skeptics help push the organization to deliver the benefits specified in the business case.

Project managers (and other team members) often dread interacting with skeptics, and many try to keep them off their teams, fearing they will slow progress and be divisive. Some misguided organizations punish (or even fire!) skeptics for questioning aspects of important projects. At one Fortune 500 company, the QA leader on a large project asked such difficult and embarrassing questions that the project leader had her transferred off the project. Six months later, when the project's schedule and viability were in jeopardy, the company hired consultants to rescue it. The consultants' approach incorporated many of the skeptic's initial suggestions. Listening to their own insightful QA leader would have been a more effective, more timely and far cheaper solution. Bad news does not improve with age.

Don't avoid skeptics — seek them out! Teach your team to value the contributions of loyal skeptics. Their pesky questions will save you time, money and effort down the road. It's always better to know where the potholes are so you can avoid driving over them. A loyal skeptic is an invaluable resource and a critical element of long-term project success. Who is yours? ◆

> **It can sometimes be difficult to distinguish between negative and loyal skeptics.**

Bart Perkins is managing partner at Louisville, Ky.-based Leverage Partners, which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.

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